

**DEPARTMENT of ENVIRONMENTAL SERVICES**  
**Water Supply & Pollution Control Division - Biology Bureau**

**LAKE TROPHIC DATA**

**MORPHOMETRIC:**

Lake: BLACK RESERVOIR	Lake Area (ha):	12.14
Town: RINDGE	Maximum depth (m):	1.5
County: Cheshire	Mean depth (m):	0.6
River Basin: Merrimack	Volume (m <sup>3</sup> ):	67500
Latitude: 42°47'20" N	Relative depth:	0.4
Longitude: 71°58'40" W	Shore configuration:	1.54
Elevation (ft): 1095	Areal water load (m/yr):	56.41
Shore length (m): 1900	Flushing rate (yr <sup>-1</sup> ):	101.3
Watershed area (ha): 1174.3	P retention coeff.:	0.34
% watershed ponded: 6.5	Lake type:	artificial

**BIOLOGICAL:**

**5 February 1991**

**11 September 1990**

DOM. PHYTOPLANKTON (% TOTAL)	#1	DINOBRYON 75%	CHRYSPHAERELLA 70%
	#2	TABELLARIA 20%	DINOBRYON 15%
	#3		
PHYTOPLANKTON ABUNDANCE (cells/mL)			3195.0
CHLOROPHYLL-A (µg/L)			4.95
DOM. ZOOPLANKTON (% TOTAL)	#1	KERATELLA 50%	POLYARTHRA 38%
	#2		NAUPLIUS LARVA 30%
	#3		KERATELLA 16%
ROTIFERS/LITER		16	229
MICROCRUSTACEA/LITER		0	142
ZOOPLANKTON ABUNDANCE (#/L)		20	403
VASCULAR PLANT ABUNDANCE			Very abundant
SECCHI DISK TRANSPARENCY (m)			1.5 Visible on bottom
BOTTOM DISSOLVED OXYGEN (mg/L)		11.2	5.9
BACTERIA (fecal col., #/100 ml) #1			< 10
	#2		
	#3		

**SUMMER THERMAL STRATIFICATION:**

not stratified

Depth of thermocline (m): None  
Hypolimnion volume (m<sup>3</sup>) : None  
Anoxic volume (m<sup>3</sup>) : None

**CHEMICAL:**

Lake: BLACK RESERVOIR

Town: RINDGE

	5 February 1991		11 September 1990		
DEPTH (m)	1.0	2.0	1.0		
pH (units)	5.3	5.5	6.1		
A.N.C. (Alkalinity)	0.5	1.5	2.3		
NITRATE NITROGEN	< 0.05	< 0.05	< 0.05		
TOTAL KJELDAHL NITROGEN	0.53	0.56	0.40		
TOTAL PHOSPHORUS	0.008	0.002	0.014		
CONDUCTIVITY ( $\mu$ mhos/cm)	41.9	43.8	38.1		
APPARENT COLOR (cpu)	50	49	60		
MAGNESIUM			0.48		
CALCIUM			1.9		
SODIUM			3.8		
POTASSIUM			0.40		
CHLORIDE	5	6	6		
SULFATE	6	5	4		
TN : TP	66	280	29		
CALCITE SATURATION INDEX			4.6		

All results in mg/L unless indicated otherwise

**TROPHIC CLASSIFICATION: 1990**

D.O. S.D. PLANT CHL TOTAL CLASS

**	3	6	1	10	Eutro.
----	---	---	---	----	--------

**COMMENTS:**

1. This is a very irregularly-shaped artificial impoundment, having three distinct basins -- northern, southern and western. The road separates the northern and southern basins, and a 3 foot culvert connects the two. Dams are located at the downstream ends of both the northern and western basins.
2. No official access; we launched off the road.
3. One cottage was present along the northern basin and a house was located near the dam of the same basin.
4. Greens were the dominant class of wholewater phytoplankton (85%), with Crucigenia (60%) and Scenedesmus (15%) the dominant genera.

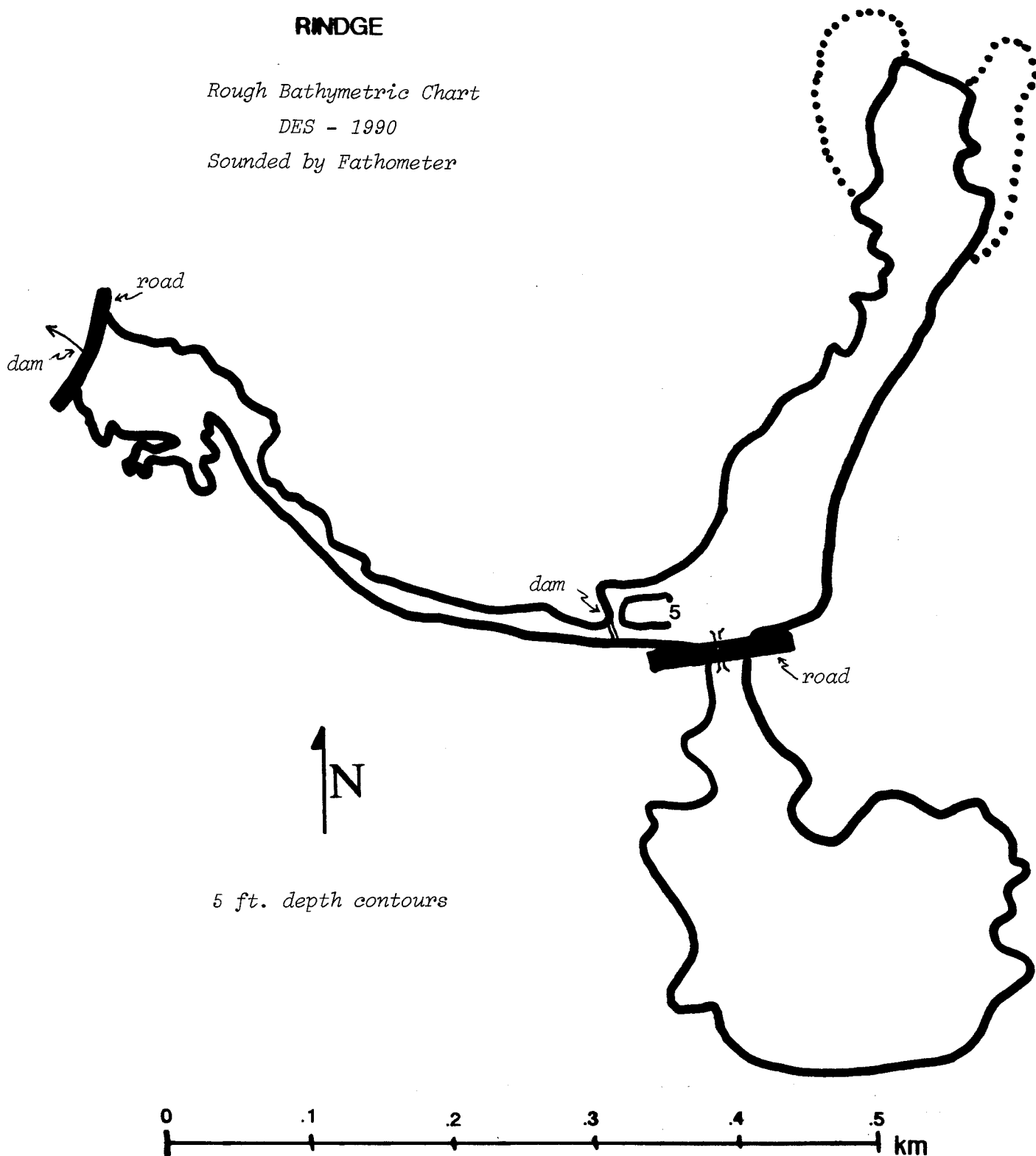
# BLACK RESERVOIR

RINDGE

*Rough Bathymetric Chart*

*DES - 1990*

*Sounded by Fathometer*

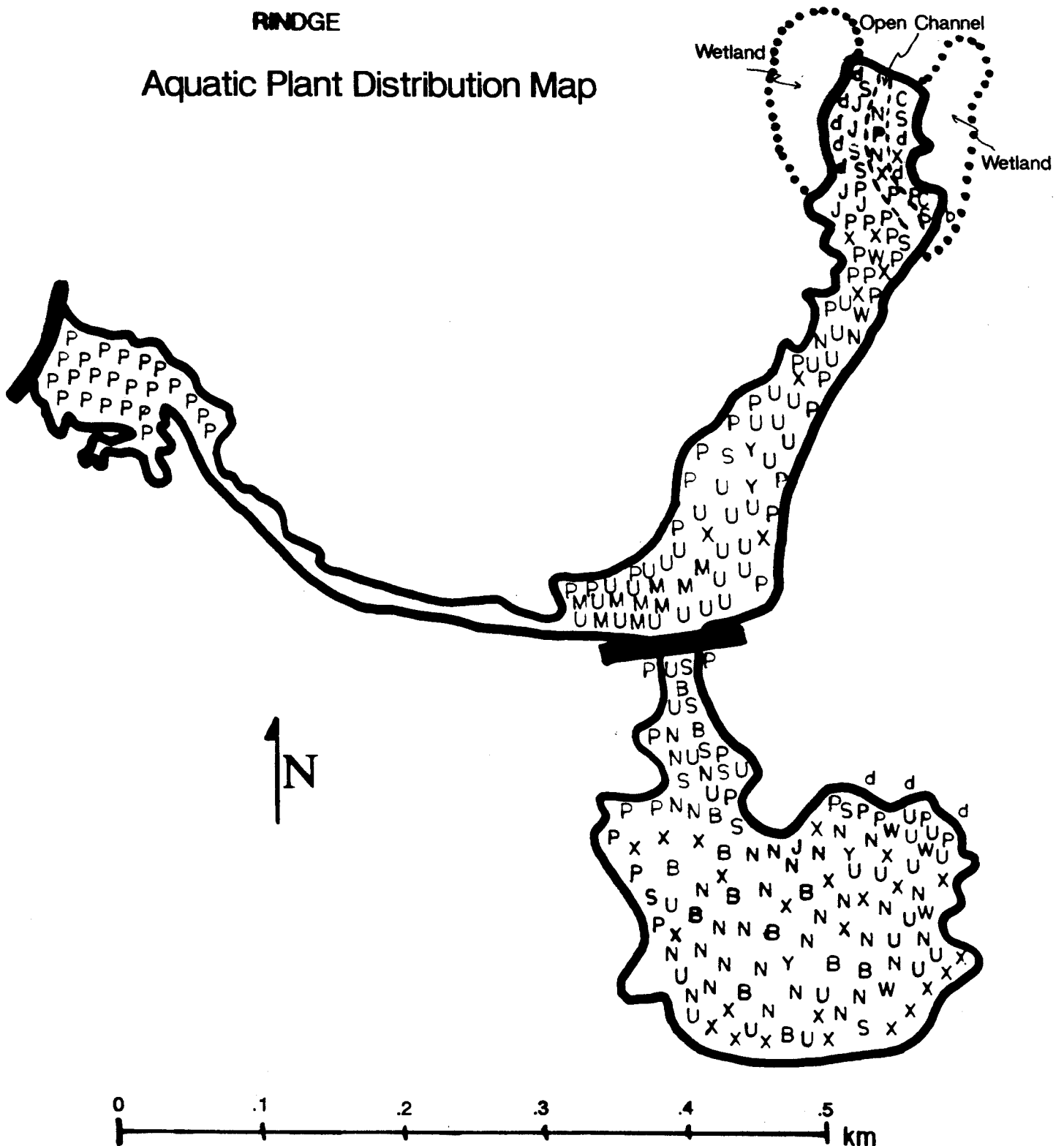


[illegible]

# BLACK RESERVOIR

RINDGE

## Aquatic Plant Distribution Map



[illegible]